



# TN NHSN User Call

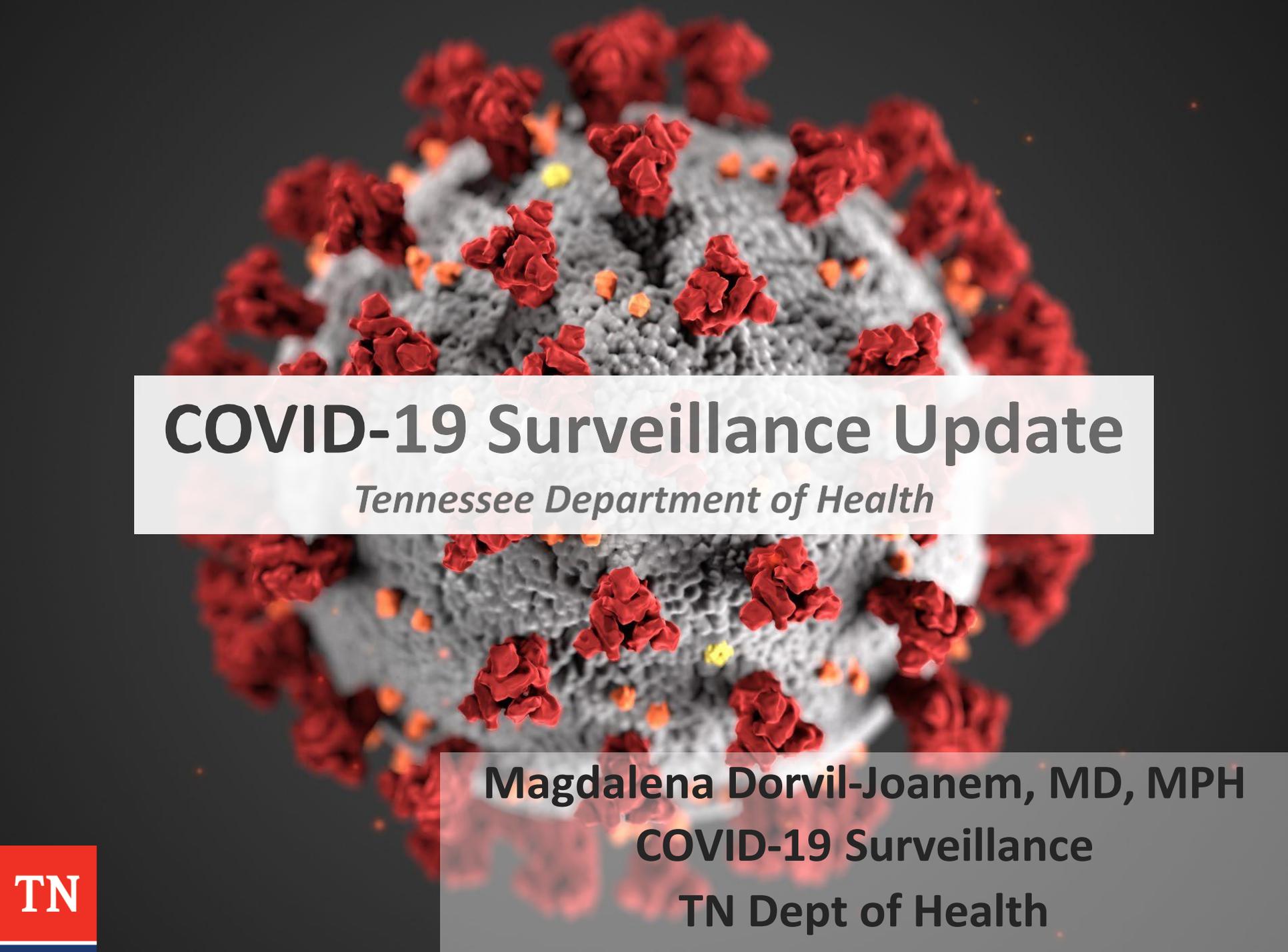
Monday, May 15, 10am CT

# Agenda

- **COVID-19 Update**
  - **Magdalena Dorvil-Joanem, MD, MPH**
- **NHSN Update**
  - **Vicky Lindsey, AAS, RN, CIC**
- **COVID-19 Hospital Data Guidance Update**
  - **Meisha Millwee**
- **NHSN Demo**
  - **Abigail Marrero, MPH, CPH**
- **Multi-Drug Resistant Organism (MDRO) Surveillance Team Update**
  - **Alex Kurutz, MPH**

# TDH NHSN Team

- **Abigail Marrero, MPH**
  - Senior NHSN Epidemiologist
- **Vicky Lindsey, AAS, RN, CIC**
  - Senior NHSN Public Health Nurse Consultant
    - Lead Technological Assistance
  - Infection Prevention and Control Specialist
- **Tara Suhs, MPH**
  - Assistant NHSN Epidemiologist
  - MRSA Initiative Lead
- **Ashley Gambrell, MPH**
  - Assistant NHSN Epidemiologist
- **Marissa Turner, MPH**
  - Assistant NHSN Epidemiologist
- **Alex Kurutz, MPH**
  - Dialysis Epidemiologist
- **Dr. Simone Godwin, DVM, MPH, MS**
  - Outbreak Lead



# COVID-19 Surveillance Update

*Tennessee Department of Health*

**Magdalena Dorvil-Joanem, MD, MPH**

**COVID-19 Surveillance**

**TN Dept of Health**

# PHE Ending Impact on COVID Data

- **The federal government COVID-19 Public Health Emergency (PHE) Declaration ended on May 11, 2023**
- **Impact on COVID data**
  - **Most COVID data are not directly affected by PHE ending**
  - **CDC announced sunset of community transmission levels**
  - **CDC provides hospital admission and mortality data as key surveillance metrics**

# COVID-19 Trends in TN & US

- **Tennessee**
  - Hospitalizations decreasing
  - Deaths decreasing
- **U.S.A.**
  - Deaths decreasing
  - New hospitalizations decreasing

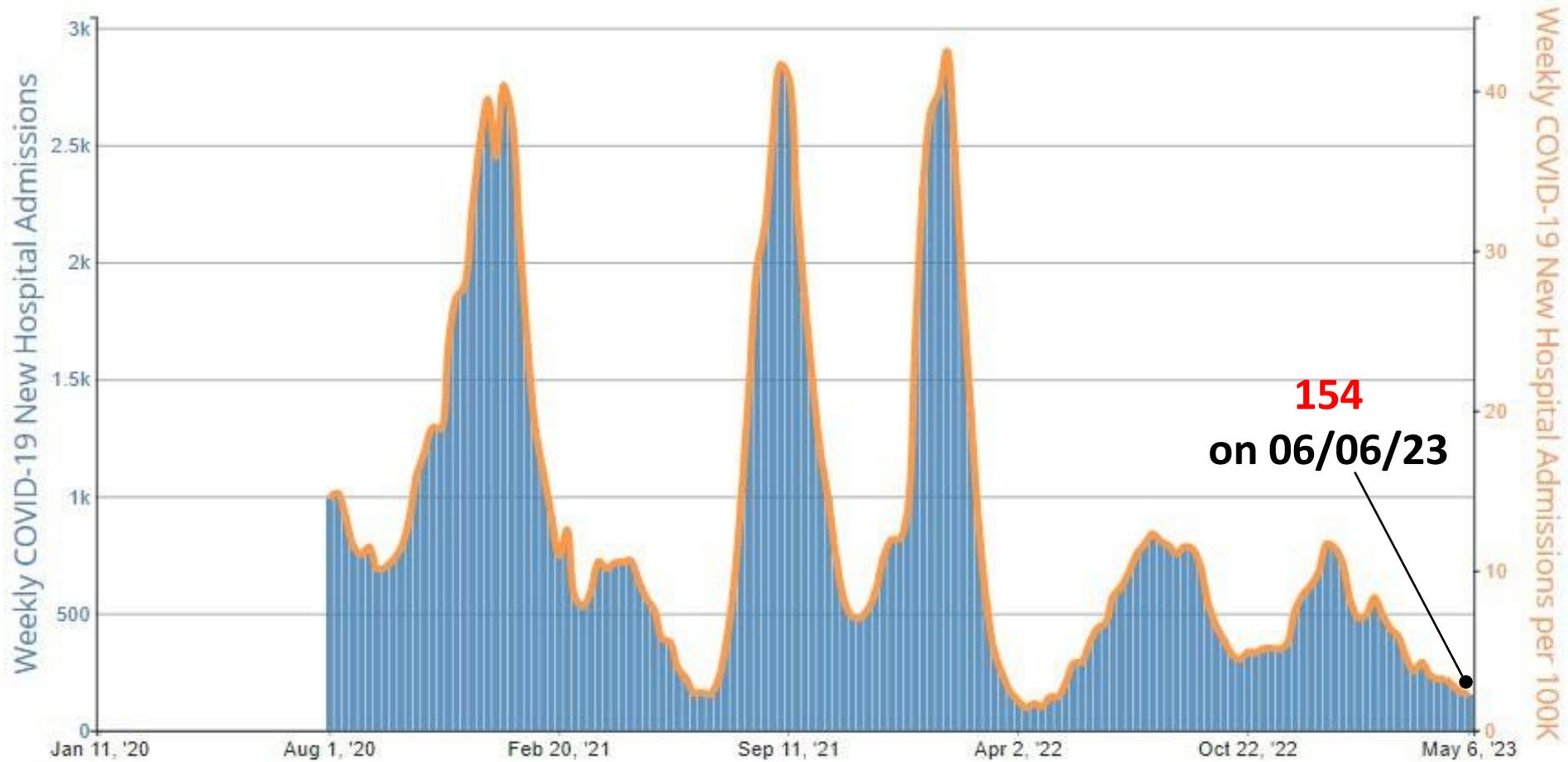
Total Hospitalizations 6,143,551  
Trend in Hospital Admissions -6.5% in past week



Total Deaths 1,127,928  
Trend in % COVID-19 Deaths -5.3% in past week



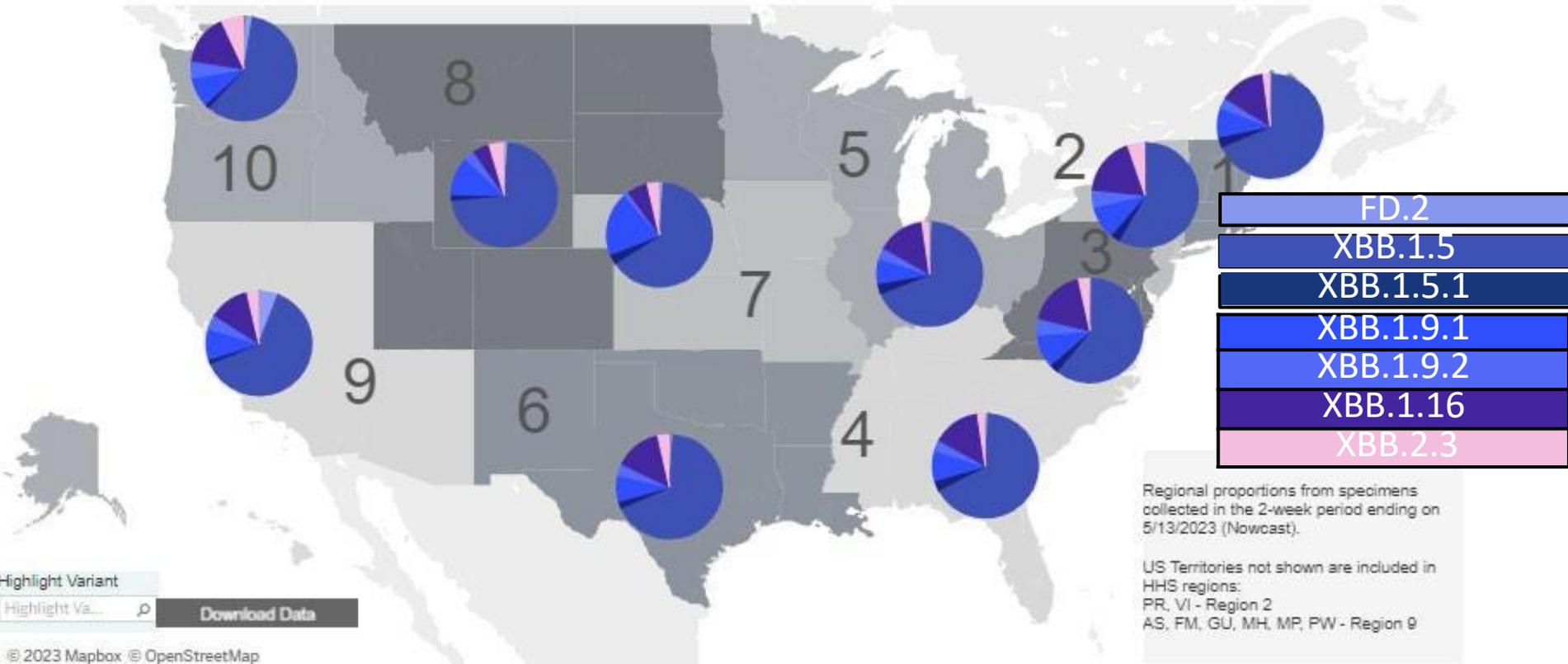
# New Hospital Admissions





# Variant Proportions by HHS Region

Nowcast Estimates in for 4/30/2023 – 5/13/2023 by HHS Region



Highlight Variant  
 Highlight Va...  [Download Data](#)

© 2023 Mapbox © OpenStreetMap

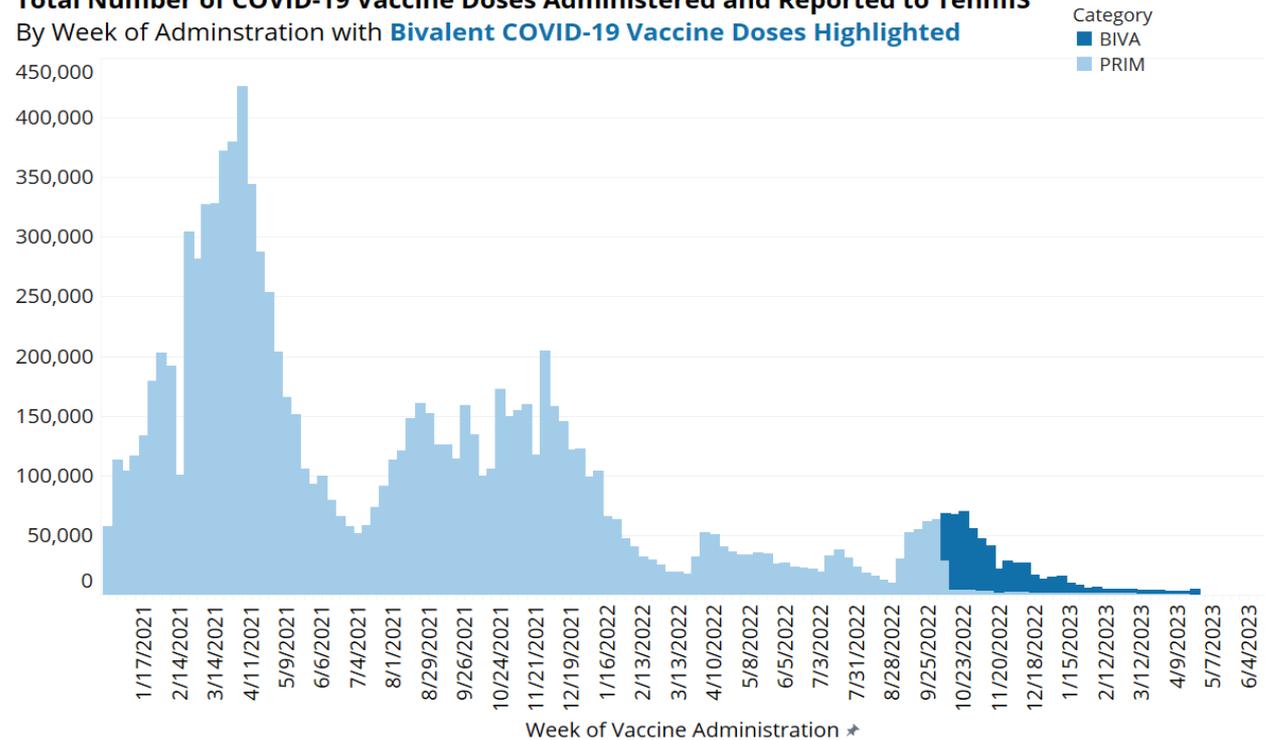
Lineages called using pangolin v4.2, pangolin-data v1.19 and usher v0.6.2.

Updated May 12, 2023

# Vaccine Update (as of 5/01/2023)

- **Tennesseans with Bivalent Booster (% of total population)**
  - 429,819 or 6.16% (previously 6.08%)<sup>1</sup>
  - National rate = 16.8% (previously 16.5%)<sup>2</sup>

**Total Number of COVID-19 Vaccine Doses Administered and Reported to TennIIS**  
By Week of Administration with **Bivalent COVID-19 Vaccine Doses Highlighted**



<sup>1</sup> As reported by TennIIS: <https://www.tn.gov/health/cedep/ncov/covid-19-vaccine.html>

<sup>2</sup> As reported by CDC: <https://covid.cdc.gov/covid-data-tracker/#vaccinations>



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**NHSN Updates**

# HPS COVID-19 Vaccination Data Reporting: Post-Public Health Emergency

- **Should facilities continue reporting healthcare personnel COVID-19 vaccination data through the Weekly COVID-19 Vaccination Module?**
  - **Yes. CMS-certified facilities must continue to report healthcare personnel COVID-19 vaccination data through the Weekly COVID-19 Vaccination Module even after the PHE is declared over on May 11, 2023.**
- **COVID-19 Vaccination Coverage among Healthcare Personnel is part of several CMS Quality Reporting Programs.**
  - **The COVID-19 Vaccination Coverage among Healthcare Personnel is a quality measure; therefore, any changes would go through the annual rule-making process for these Quality Reporting Programs.**
- **Please note that this is separate from other required COVID-19 reporting, such as COVID-19 hospital admission reporting required under CMS Conditions of Participation.**

# HPS COVID-19 Vaccination Data Reporting: Post-Public Health Emergency

- **What is the benefit of continuing to report COVID-19 vaccination data through NHSN after the PHE ends?**
  - **It is important to incentivize and track healthcare personnel vaccination in facilities through quality measurement to protect healthcare personnel, patients, and caregivers, and to help sustain the ability of facilities to continue serving their communities.**
- **How often should facilities report these data?**
  - **There are no changes to the frequency of data reporting.**
  - **Facilities should continue to report data for at least one week per month for each reporting quarter. COVID-19 vaccination data should be submitted by the end of the quarter, as defined by CMS.**
  - **Facilities can select any week within the month to report data.**
    - **As a reminder, a week is designated as belonging to the month that contains the week-end date. For example, submitting data for the week of Monday, May 29, 2023 – Sunday, June 4, 2023, counts as reporting for a week in June (and not May).**

# HPS COVID-19 Vaccination Data Reporting: Post-Public Health Emergency

- **Where can facilities access training materials?**
  - Materials pertaining to healthcare personnel COVID-19 vaccination data reporting are found on this webpage: [HPS | Weekly HCP COVID-19 Vaccination | NHSN | CDC](#)
- This operational guidance document outlines the CMS reporting requirement: [Operational Guidance COVID-19 Vaccination Reporting Rule \(cdc.gov\)](#)
- For any questions, please send an e-mail to the NHSN Helpdesk at [NHSN@cdc.gov](mailto:NHSN@cdc.gov) with “COVID-19 Vaccination” in the subject line of the e-mail, along with your facility type.

# Today May 15, 2023 Deadline

- **Acute Care Hospitals,**
- **Cancer Hospitals**
- **Inpatient Rehabilitation Facilities**
- **Long-term Acute Care Facilities (Long-term Care Hospitals)**
- **Skilled Nursing Facilities**
- **Inpatient Psychiatric Facilities**
  - **2022 Quarter 4 data**
  - **2022 Quarter 4 & Quarter 1 2023 Annual Influenza Data (October 1 – March 31, 2023)**
- **Email on 5/5/2023 with specific data required for each facility type**



**COVID-19 Hospital Data  
Guidance Update  
Meisha Millwee**

# Hospital COVID-19 Data Reporting: Post-Public Health Emergency

## UPDATED GUIDANCE OVERVIEW

- **The federal Public Health Emergency (PHE) for COVID-19, declared under Section 319 of the Public Health Service (PHS) Act, has expired as of the end of the day on May 11, 2023.**
  - HHS/CDC has finalized some reductions in the number of data elements reported daily by hospitals.
  - The implementation of these changes begins **Sunday, June 11th**. Current reporting remains the same through Saturday, June 10<sup>th</sup>.
  - The cadence of reporting remains the same, with some data element reductions.

*For any questions, please send an e-mail to the NHSN Helpdesk at [NHSN@cdc.gov](mailto:NHSN@cdc.gov) with “COVID-19 Patient Safety Component” in the subject line of the e-mail, along with your facility type.*

# NHSN COVID-19 Data Reporting: Data Element Reduction

## QUESTIONS / FIELDS NO LONGER BE REQUIRED:

- *For Tennessee, each of these are calculated fields based upon other questions in the HRTS COVID survey.*
  - Total hospitalized adult suspected or laboratory-confirmed COVID-19 patients.
  - Total hospitalized pediatric suspected or laboratory-confirmed COVID-19 patients.
  - Hospitalized and ventilated COVID-19 patients - Patients currently hospitalized in an adult, pediatric, or neonatal inpatient bed who have suspected or laboratory-confirmed COVID-19 and are on a mechanical ventilator.
  - Total ICU adult suspected or laboratory-confirmed COVID-19 patients.

# HRTS COVID-19 Data Reporting: Data Element Reduction

## QUESTIONS NO LONGER REQUIRED / TO BE REMOVED:

- *These questions will be removed from the HRTS COVID-19 survey and set to optional in the CSV file for both inbound and outbound (SFTP) reporting.*
  - Hospital onset - Total current inpatients with onset of suspected or laboratory-confirmed COVID-19 fourteen or more days after admission for a condition other than COVID-19.
  - Previous day's adult admissions with suspected COVID-19 and breakdown by age bracket: 18-19 • 20-29 • 30-39 • 40-49 • 50-59 • 60-69 • 70-79 • 80+ • Unknown.
  - Previous day's pediatric admissions with suspected COVID-19.
  - Previous day total ED visits.
  - Previous day total COVID-19-related ED visits

# Hospital COVID-19 Data Reporting: Actions

## HRTS / SFTP Partners Reporting via CSV:

- **HRTS Survey**
  - Remove 5 questions from the COVID-19 Survey.
- **SFTP / CSV**
  - Set the 5 questions and related calculated fields to optional on the inbound / outbound schema.
- **Reporting Cadence**
  - Continue daily reporting as is.
    - Daily data is still required and must be collected.
    - Waiting until the end of the week introduces room for lost data and errors.
    - Users are already accustomed to the current process.
    - TDH will continue to run compliance weekly
- **Psychiatric and rehabilitation facilities will continue to submit data once annually from October to October and will include the reduced data elements, as stated in the reporting guidance document: [Hospital COVID-19 Reporting Guidance Document](#)**



# NHSN Data Demo 2023

# Agenda of Instructions

- **Review generating data set**
- **Exporting report**
- **Using Excel to run analysis**
  - **Filter**
  - **Freeze Panes**
  - **Conditional Formatting**
  - **P-value**
  - **Pivot Tables**



**Generate NHSN Data  
Set**

# NHSN Analysis Resources

- <https://www.cdc.gov/nhsn/ps-analysis-resources/reference-guides.html>

## National Healthcare Safety Network (NHSN)

CDC > NHSN > Analysis Resources

🏠 NHSN

NHSN Login

About NHSN +

Enroll Here +

Materials for Enrolled Facilities +

2015 Rebaseline

Group Users +

Analysis Resources -

Analysis Quick Reference Guides -

Keys to Success with NHSN Data

## Patient Safety Analysis Quick Reference Guides

These quick reference guides were created to help you understand, modify, and interpret your data using the application's various analysis output (report) options for the NHSN Patient Safety Component. These guides are companions to the "Introduction to NHSN Analysis" training slideset.

**New!** [Keys to Success with NHSN Data](#)

A quick reference guide for interpreting NHSN SIR calculations.

**New!** [NHSN's Guide to the SUR \(updated October 2018\)](#) [PDF - 1 MB]

A comprehensive guide to the NHSN's SUR, including significant factors used in the SUR calculations under the 2015 baseline.

**New!** [NHSN's Guide to the SIR \(updated August 2018\)](#) [PDF - 3 MB]

A comprehensive guide to NHSN's SIR, including risk factors used in the SIR calculations under the 2015 baseline.

**New!** [How to Modify a Report](#) [PDF - 375K]

# NHSN Analysis Reports

- **Report Options:**
  - Line List
  - Frequency Table
  - Bar/Pie Chart
  - Rate Table/Run Chart
  - SIR Report
  - SUR Reports
  - TAP Reports
- **Clicking Run will run a stock report**
- **Click Modify to create more specific reports**

The screenshot displays the 'Analysis Reports' interface. At the top, there is a search bar and two buttons: 'Expand All' and 'Collapse All'. Below this is a tree view of report categories. The 'Central Line-Associated BSI' folder is expanded, showing a list of report options with small icons representing their visual format (e.g., line list, frequency table, bar chart, pie chart, rate table, run chart). The 'SIR SIR - Acute Care Hospital CLAB Data' report is selected and highlighted in blue. A context menu is open over this report, showing three options: 'Run Report' (with a play button icon), 'Modify Report' (with a gear icon), and 'Export Data Set' (with a download icon).

# Modify Reports: Line Listing

The screenshot displays the 'Analysis Reports' interface. At the top left is a circular icon of a healthcare worker. The main header is 'Analysis Reports'. Below it are two buttons: 'Expand All' and 'Collapse All', followed by a search input field. A tree view lists various report categories, including 'Device-Associated (DA) Module', 'Procedure-Associated (PA) Module', 'HAI Antimicrobial Resistance (DA+PA)', 'Antimicrobial Use and Resistance Modu', 'MDRO/CDI Module - LABID Event Rep', 'MDRO/CDI Module - Infection Surveill', 'MDRO/CDI Module - Process Measure', 'MDRO/CDI Module - Outcome Measur', 'Baseline Set 1', 'Advanced', 'My Custom Reports', and 'Published Reports'. A zoomed-in view of the 'Device-Associated (DA) Module' section shows a sub-tree with 'Central Line-Associated BSI' and 'Line Listing - All CLAB Events'. A context menu is open over 'Line Listing - All CLAB Events', showing options: 'Run Report', 'Modify Report' (highlighted), and 'Export Data Set'. The menu also shows 'Events' and 'ICU-Other' on the right side.

# Modifying Reports : Line Listing

## Modify "Line Listing - All CLAB Events"

Show descriptive variable names ([Print List](#))

Analysis Data Set: CLAB\_Events    Type: Line Listing

Title/Format

Time Period

Filters

Display Variables

Sort Variables

Display Options

Title:

Line Listing for All Central Line-Associated BSI Events

Format:



# Modifying Reports : Line Listing

## Modify "Line Listing - All CLAB Events"

Show descriptive variable names (Print List)

Analysis Data Set: CLAB\_Events

Type: Line Listing

Data Set Generated On: 01/25/2017 09:25:00

Title/Format

Time Period

Filters

Display Variables

Sort Variables

Display Options

### Display Variables:

#### Available Variables:

evntDateYH  
evntDateYM  
evntDateYQ  
evntDateYr  
evntToDisDays  
id2  
lcbiPath  
lcbiPathDesc  
linkedproc  
locationType  
locCDC  
locCDCDesc  
locLabel  
locStatus  
mbi\_lcbi

All >>

Selected >

Add selected variables to the report

<< All

#### Selected Variables:

orgID  
patID  
dob  
gender  
eventDate  
eventType  
spcEvent  
location

^ Up

v Down

↶ Undo

# Modifying Reports: SIR

**Modify "SIR - Acute Care Hospital CLAB Data"**

Show descriptive variable names ([Print List](#))

Title/Format   Time Period   Filters   **Display Options**

SIR Options:

Group by: summaryYH ▾

- Cumulative
- summaryYH
- summaryYM
- summaryYQ
- summaryYr

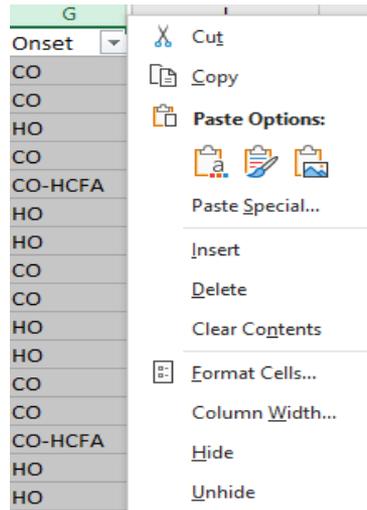
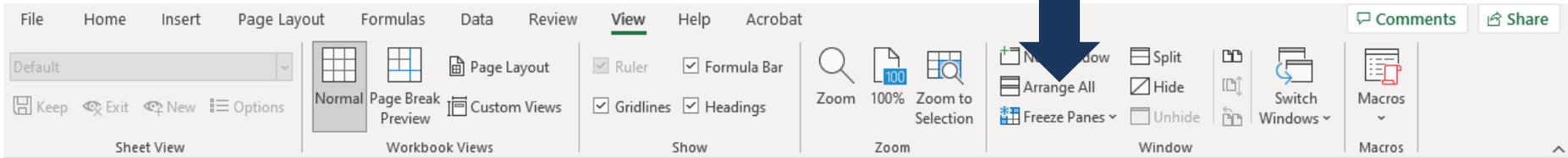
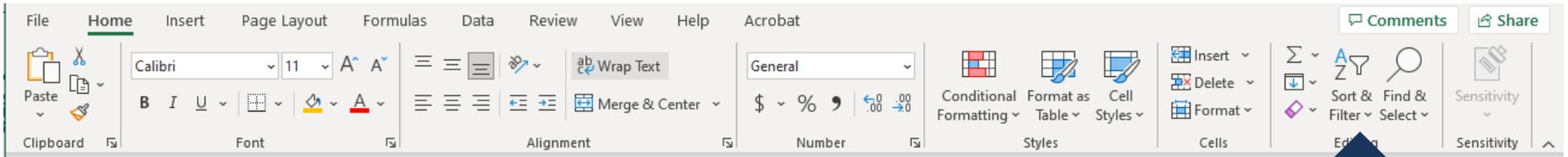


**NHSN to Excel**

# Why Analyze?

- **We want these numbers to talk to us, what is their story?**
- **We have a whole lot of data, but if we can't speak their language, it doesn't help us or our patients**
- **Reports generated from NHSN can help inform prioritization and success of prevention activities.**

# Filter, Freeze & Hide



# Conditional Formatting

The screenshot displays the Microsoft Excel interface with the 'Home' ribbon selected. The 'Conditional Formatting' dropdown menu is open, showing various options. The 'Highlight Cells Rules' menu is expanded, showing options like 'Greater Than...', 'Less Than...', 'Between...', 'Equal To...', 'Text that Contains...', 'A Date Occurring...', and 'Duplicate Values...'. The data table below shows the following data:

	A	B	C	D	E	F	G
1	summary~YQ	Events	Number~Predicted	Central Line Days	SIR p-value	SIR	95% Confidence~In Locati
2	2022Q1	104	139.4984721	136632	0.002	0.746	0.612, 0.900
3	2022Q2	63	122.9041022	119656	0	0.513	0.397, 0.652
4	2022Q3	89	127.6502167	124299	0.0003	0.697	0.563, 0.854
5	2022Q4	78	130.656035	127055	0	0.597	0.475, 0.741
6	2022Q1	66	70.51965101	65471	0.6009	0.936	0.730, 1.183
7	2022Q2	41	66.2753501	61125	0.0009	0.619	0.450, 0.831
8	2022Q3	115	80.12306109	76162	0.0003	1.435	1.190, 1.716
9	2022Q4	103	76.86835134	71040	0.0052	1.34	1.099, 1.618
10	2022Q1	5	16.95238679	11135	0.0009	0.295	0.108, 0.654
11	2022Q2	4	16.68279903	11347	0.0003	0.24	0.076, 0.578
12	2022Q3	14	16.98567391	11616	0.4838	0.824	0.469, 1.350
13	2022Q4	9	16.99116528	11982	0.0389	0.53	0.258, 0.972

# Standardized Infection Ratio (SIR) Review

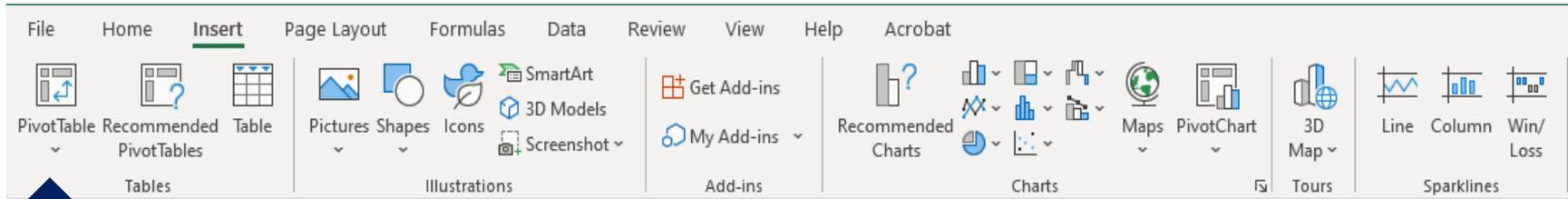
$$\text{SIR} = \frac{\text{Observed (O) HAIs}}{\text{Predicted (P) HAIs}}$$

- To calculate O, sum the number of HAIs among a group
- To calculate P, requires the use of the appropriate aggregate data – 2015 national baseline
  
- **SIR > 1.0: # infections are HIGHER than predicted**
- **SIR < 1.0: # infections are LOWER than predicted**

# P-value Review

- **Helps you determine the significance of your results, less than 0.05 is significant**
- **P-values are expressed as decimals although it may be easier to understand what they are if you convert them to a percentage.**
  - **A p value of 0.0254 is 2.54%. This means there is a 2.54% chance your results could be random (i.e. happened by chance).**
  - **That's pretty tiny. On the other hand, a large p-value of .9(90%) means your results have a 90% probability of being completely random and not due to anything in your experiment. Therefore, the smaller the p-value, the more important (“significant“) your results.**

# Pivot Table



PivotTable from table or range

Select a table or range

Table/Range: 'CLABSI Line List & Pivots'!\$A\$1:\$F\$18

Choose where you want the PivotTable to be placed

New Worksheet

Existing Worksheet

Location:

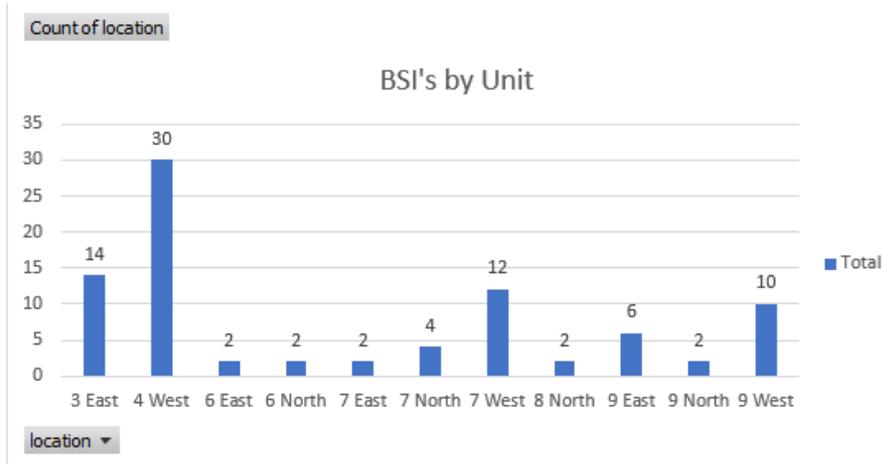
Choose whether you want to analyze multiple tables

Add this data to the Data Model

OK Cancel

# By Location

Row Labels	Count of location
3 East	14
4 West	30
6 East	2
6 North	2
7 East	2
7 North	4
7 West	12
8 North	2
9 East	6
9 North	2
9 West	10
<b>Grand Total</b>	<b>86</b>



PivotTable Fields

Choose fields to add to report:

Search

- admitDate
- EvntDateYQ
- eventDate
- eventType
- spcEvent
- location

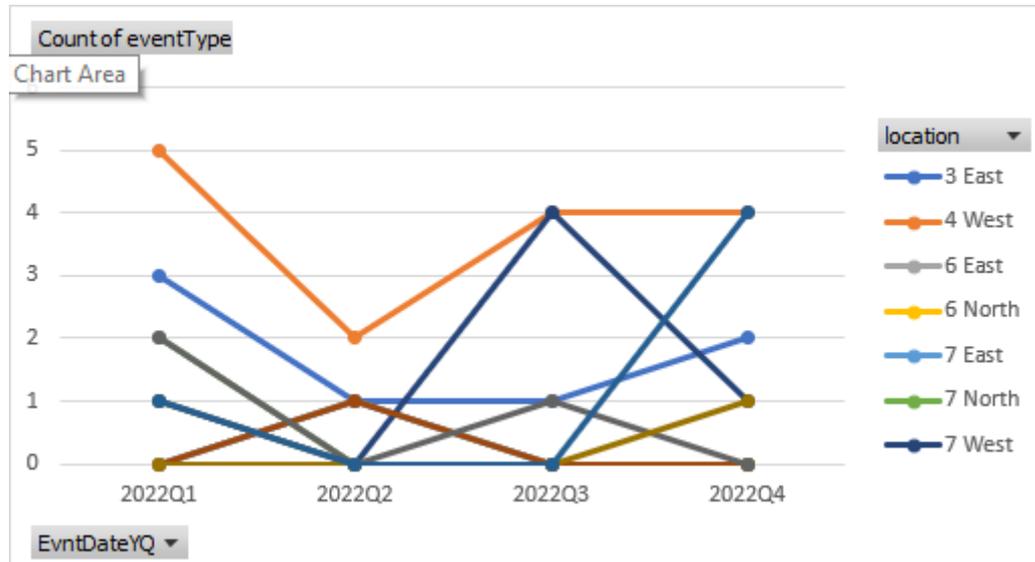
More Tables...

Drag fields between areas below:

Filters	Columns
Rows	Values
location	Count of location

# By Quarter

Count of eventType	Column Labels											
Row Labels	3 East	4 West	6 East	6 North	7 East	7 North	7 West	8 North	9 East	9 North	9 West	Grand Total
2022Q1	3	5	0	1	0	2	1	0	2	0	1	15
2022Q2	1	2	1	0	1	0	0	1	0	0	0	6
2022Q3	1	4	0	0	0	0	4	0	1	0	0	10
2022Q4	2	4	0	0	0	0	1	0	0	1	4	12
<b>Grand Total</b>	<b>7</b>	<b>15</b>	<b>1</b>	<b>1</b>	<b>1</b>	<b>2</b>	<b>6</b>	<b>1</b>	<b>3</b>	<b>1</b>	<b>5</b>	<b>43</b>



### PivotTable Fields

Choose fields to add to report:

Search

- admitDate
- EvntDateYQ
- eventDate
- eventType
- spcEvent
- location

More Tables...

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Drag fields between areas below:

Filters	Columns
	location

Rows	Values
EvntDateYQ	Count of eventType

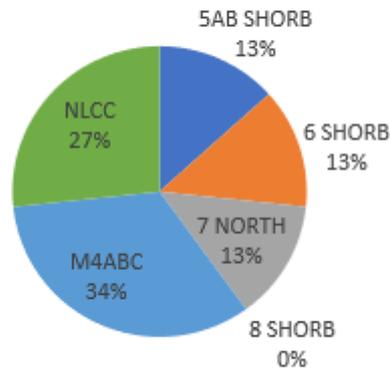
# By Pathogen

Count of Event Type	Column Labels	ENTFS	KO	KP	Grand Total
5AB SHORB	2	1	0	2	5
6 SHORB	2	4	0	0	6
7 NORTH	2	0	0	0	2
8 SHORB	0	1	0	0	1
M4ABC	5	3	1	2	11
NLCC	4	2	2	2	10
<b>Grand Total</b>	<b>15</b>	<b>11</b>	<b>3</b>	<b>6</b>	<b>35</b>

Count of Event Type

CAUTI E. Coli Infections by Unit

Chart Area



Pathogen 1

### PivotTable Fields

Choose fields to add to report:

Search

- Facility Org ID
- Fac Admission Date
- Event ID
- Event Date
- Event Type
- Specific Event
- Location
- Pathogen 1

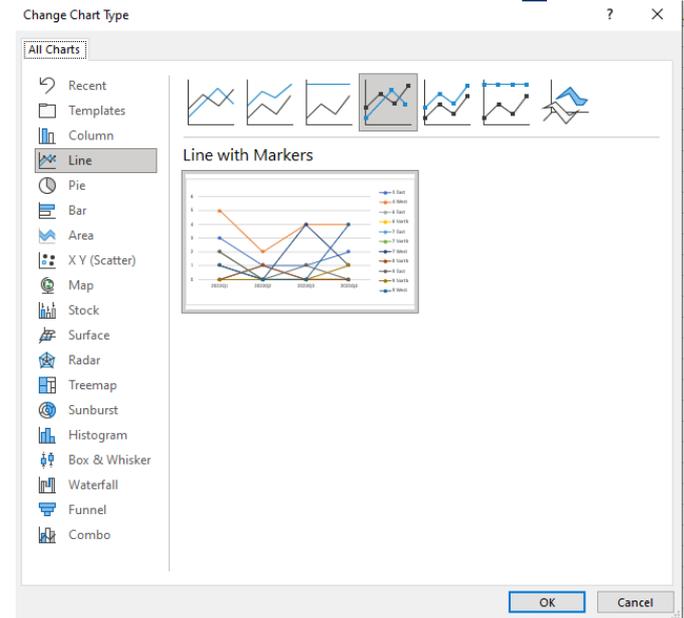
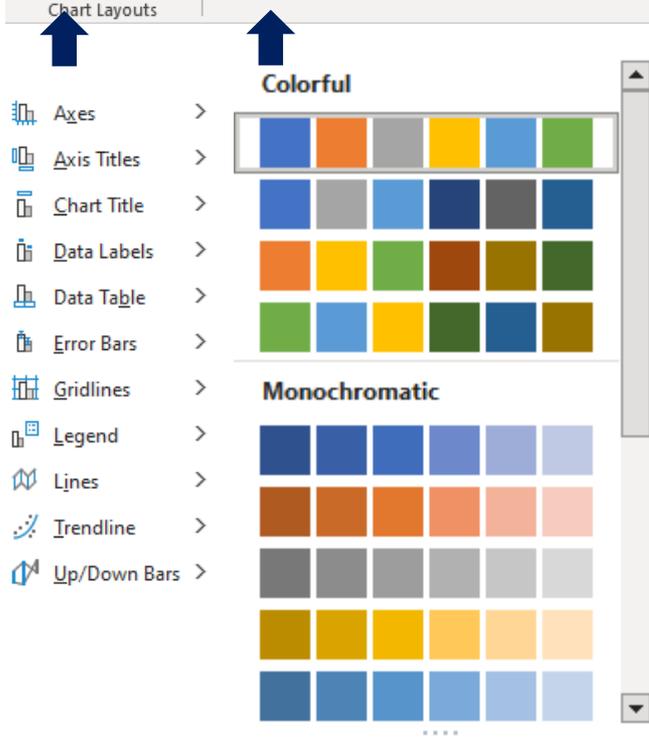
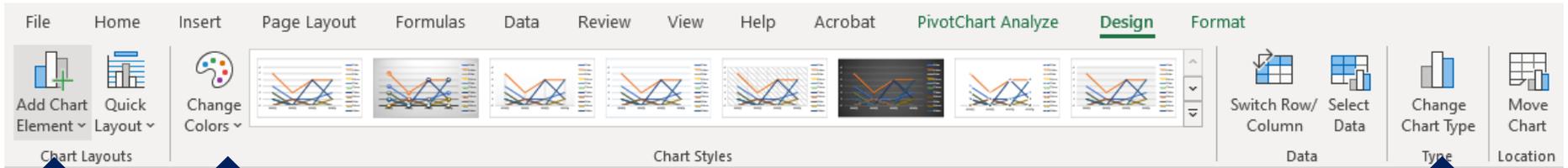
More Tables...

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Drag fields between areas below:

Filters	Columns
	Pathogen 1
Rows	Values
Location	Count of Event Type

# Chart Design



# Questions?

## Contact Information

[HAI.Health@tn.gov](mailto:HAI.Health@tn.gov)



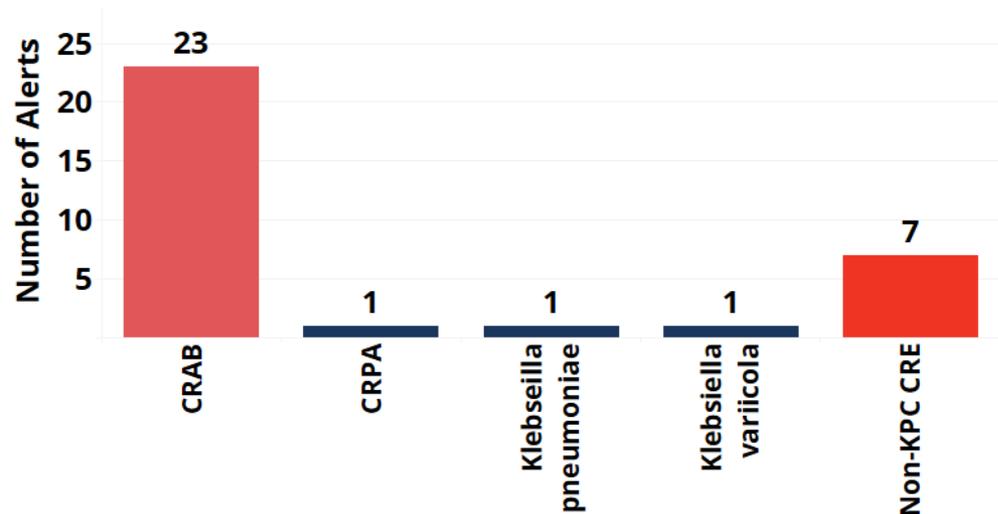
# Multi-Drug Resistant Organism (MDRO) Outbreak Team Update

April 13<sup>th</sup> – May 12<sup>th</sup>, 2023

# MDRO Alerts

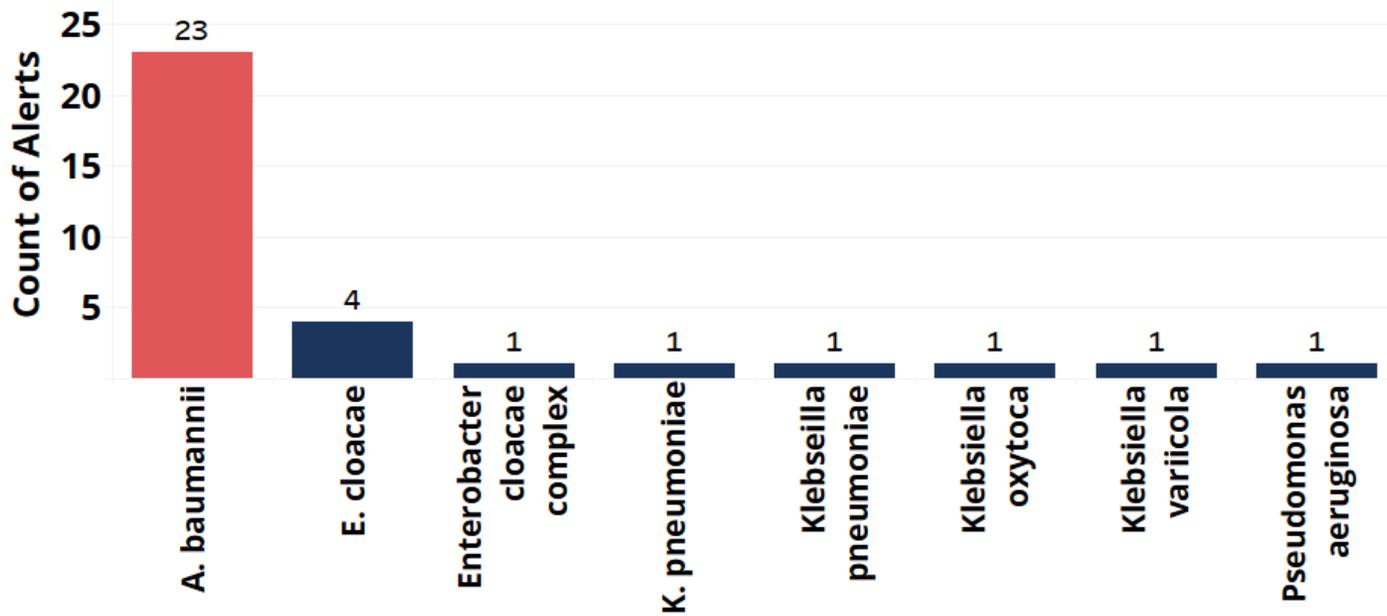
- CRPA – Carbapenem-resistant *Pseudomonas aeruginosa*
- CRAB – Carbapenem-resistant *Acinetobacter baumannii*
- CRE - Carbapenem-resistant *Enterobacterales*
- KPC – *Klebsiella pneumoniae* Carbapenemase-producing

MDRO Alerts by Organism Order  
(Apr.13th-May.12th)



# MDRO Alert Continued

Alerts by Organism  
(Apr.13th-May.12th)



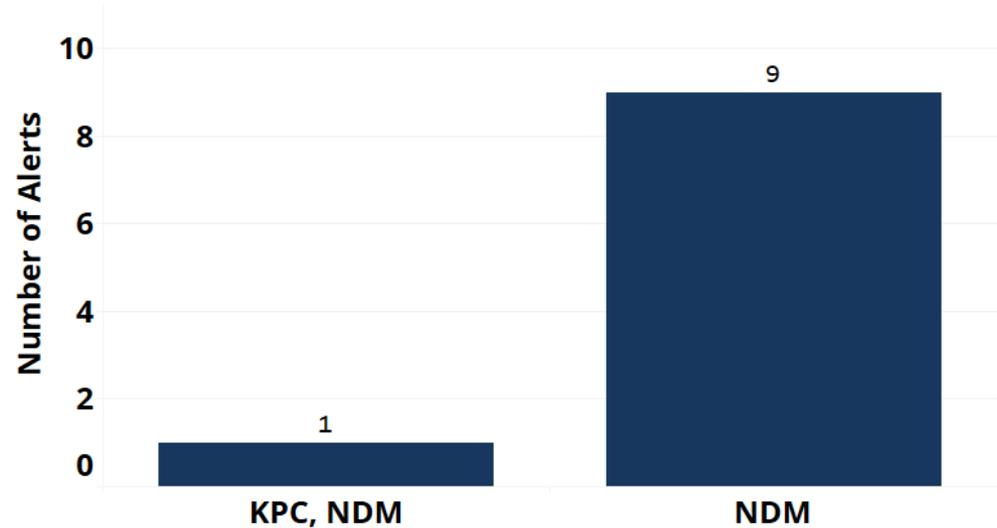
# Non-KPC CRE Genes

- **Carbapenemase-producing genes:**

- “Big Five”

- KPC
- IMP
- NDM
- OXA-48
- VIM

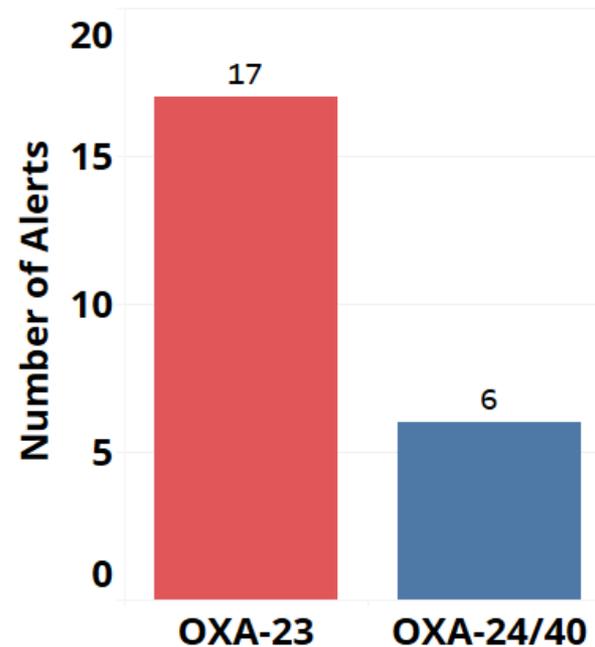
MDRO Alerts by Resistance Gene  
(Apr.13th-May.12th)



# CRAB Alerts

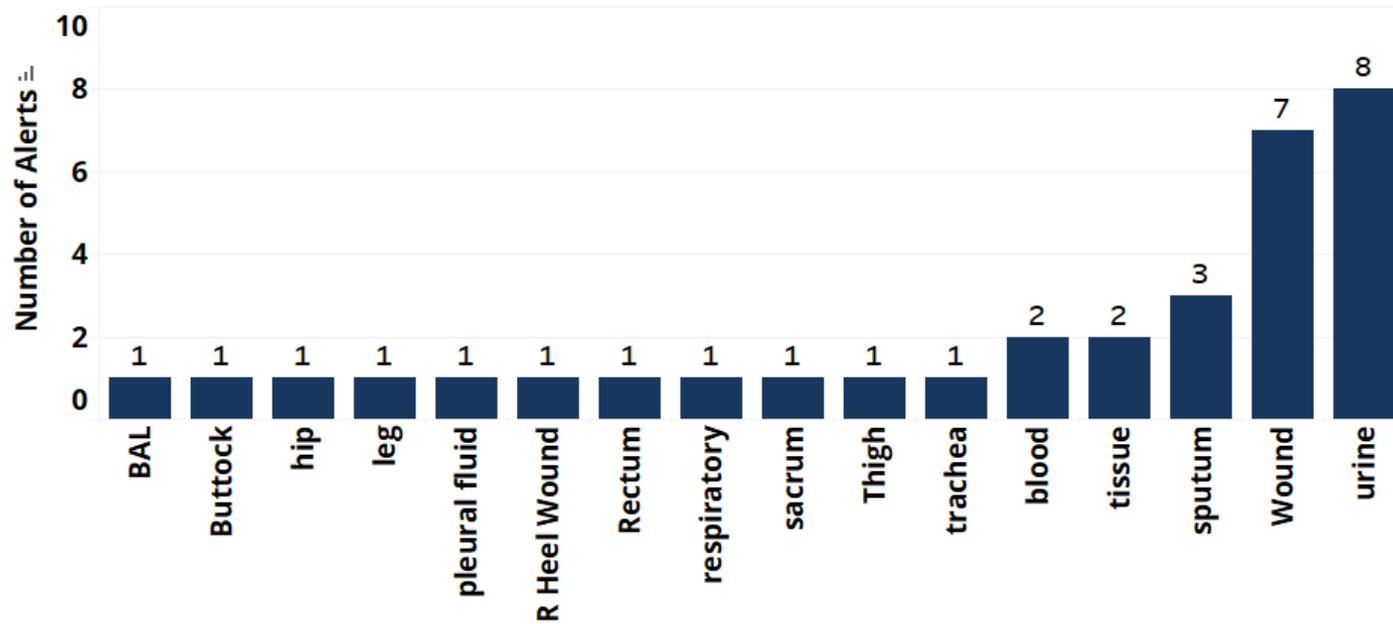
- **Carbapenemase-producing genes:**
  - **Other Oxacillinases**
    - OXA-24/40
    - OXA-23

**CRAB isolates  
(Apr.13th-May.12th)**



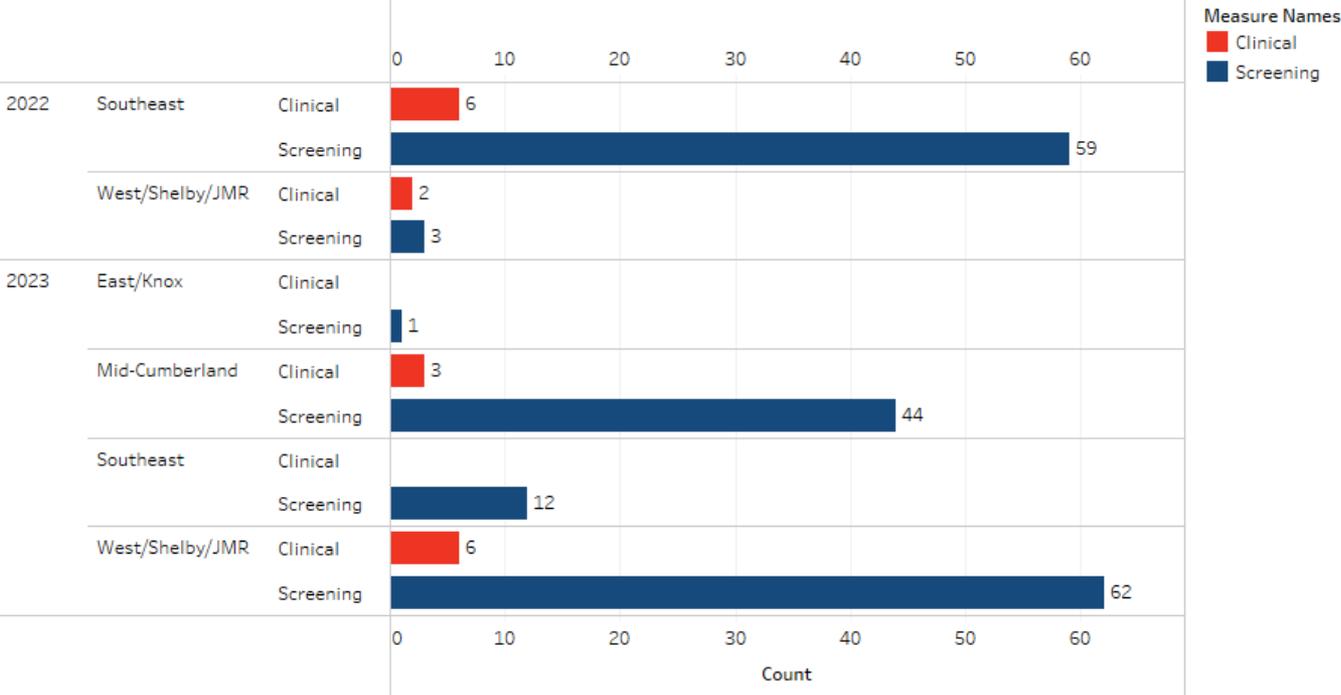
# Specimen Sources

Alerts by Specimen Source  
(Apr.13th-May.12th)



# C. auris Cases

Screening vs Clinical *Candida auris* Cases by Region (as of May 9, 2023)



Clinical and Screening for each Region broken down by Year Year. Color shows details about Clinical and Screening. The data is filtered on Year Year, which includes everything.

# TN MDRO Alerts for 2023

- **For 2023**
  - **69 CRAB specimens**
    - 51 OXA-23
    - 18 OXA-24/40
  - **29 non-KPC CRE**
    - 19 NDM
    - 2 IMP
    - 2 KPC, NDM
    - 2 KPC, VIM
    - 1 mCIM
    - 2 OXA-48
    - 1 VIM
  - ***C. auris***
    - 9 Clinical cases
    - 119 Screening cases

# Next NHSN User Call

- **Monday, June 19, 2023**
  - **10am CT / 11am ET**
- **NHSN Related**
  - [Vicky.Lindsey@tn.gov](mailto:Vicky.Lindsey@tn.gov)
  - [Simone.Godwin@tn.gov](mailto:Simone.Godwin@tn.gov)
- **AU/AR Module**
  - [Christopher.Evans@tn.gov](mailto:Christopher.Evans@tn.gov)
- **Infection Prevention**
  - [HAI.Health@tn.gov](mailto:HAI.Health@tn.gov)